

# Directions Governing the Inspection of Fire-retardant Building Materials

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## Chaper 1:General Rules

1. The provisions are defined specifically for conducting the inspection of fire-retardant building materials.
2. The provisions are applicable to the fire-retardant building materials commodity as defined below:
  - (1)Boards:
    1. Dressed rockwool boards for acoustic use and rock wool sheathing boards: for ones with a thickness above the minimum level regulated by Chinese National Standards (CNS) up to 20 mm.
    2. Calcium silicate boards (type a), fiber cement boards and regenerated fiber cement boards: for ones with a thickness above the minimum level regulated in related Chinese National Standards, in spite of its apparent density.
    3. The cement bonded wood-wool boards, cement bonded wood-flake boards, gypsum boards, decorated gypsum boards, gypsum sheathing boards, fire-resistant gypsum boards, perlite boards, calcium silicate boards (type c), slag gypsum boards, fiber reinforced cement sidings (class D), magnesium oxide boards, fire-retardant hard fiber boards, fire-retardant decorated hard fiber boards, fire-retardant insulation boards and fire-retardant plywood: for the ones with a thickness above the minimum level regulated by Chinese National Standards.
  - (2)Wall papers: wall papers (coverings) with incombustibility, fire-retardant, flame-retardant related performance.
3. Monitoring Inspection and Registration of Product Certification Scheme are

alternatives for the inspection of fire-retardant building materials. Under the Registration of Product Certification Scheme, the applicable procedures for boards are Module 2 in combination with Module 4, 5 or 7, and that for wall papers is Module 2 in combination with Module 3.

## **Chapter 2 Examination of Provisions for Monitoring Inspections**

### **4. Procedure Simplification**

#### **(1) Boards:**

1. The commodities applied for inspection in the same batch shall be fire-retardant building materials with the same goods that are classified by commodity classification of the republic of china code (referred to as C.C.C code hereinafter), country, plants or brands, thickness, incombustibility and types.
2. For the commodities applied for inspection by the obligatory applicant with 3 consecutive batches inspected batch by batch in compliance with such provisions, such a random sampling of batches with a 20% opportunity of inspection that is adopted for each batch of inspection that have applied commodities; For commodities applied for inspection with 20 batches or more and that are free from disqualification, a random batch sampling with a 10% inspection opportunity that may be adopted for each batch.
3. For the ones with disqualified examinations, the commodities with same C.C.C code, same country, same plants or brands, same thicknesses, same incombustibility and same types applied for inspection by the obligatory applicant could be recovered to be inspected with a 20% chance of random batch sampling inspection only after 3 consecutive batches are inspected batch by batch and that are all qualified with respect to sampling examination.
4. For the batches not sampled in the batch sampling inspection, the appearances and commodity inspection mark of the examination of commodities still have to be checked for each batch, in conjunction with sampling examination as

needed. For the boards commodities, which are applied by the obligatory applicant, with the completion of related marks without the application of prior release of imported commodity for 10 consecutive times and being checked (inspected) to comply with the examination provisions by the Bureau of Standards, Metrology and Inspection, Ministry of Economics Affairs. (referred to as the BSMI hereinafter) or its branches (referred to as the inspection authority hereinafter), the appearance and commodity inspection mark mentioned above are exempted.

(2) Wall Papers:

1. The commodities applied for inspection in the same batch shall be the fire-retardant paper walls, paper coverings with same C.C.C code, country and plants or brands.
2. For the commodities applied in the same batch by the obligatory applicant in compliance with the provisions after the batch by batch inspection for the first batch, a random batch sampling inspection with a 20% opportunity is adopted for each batch; for the commodities applied for inspection without disqualification record for 20 batches or more, the examination in a random batch sampling inspection with a 10% opportunity may be adopted for each batch of commodities applied for the inspection.
3. For the ones that have been disqualified by examination, the commodities with same C.C.C code, same country, same plants or brands applied for inspection by the obligatory applicant could be recovered to be inspected with a 20% opportunity, only after one batch is inspected batch by batch and qualified with respect to sampling examination.
4. For the batches that are not sampled in the batch sampling inspection, the appearances and commodity inspection mark still have to be checked for each batch, in conjunction with sampling examination as needed. For wall papers commodities, which are applied for inspection by the obligatory applicant, completing related marks without the application of prior release of imported

commodity for 10 consecutive times and checked (inspected) to be compliant with the examination of provisions by the inspection authority, the appearance and commodity inspection mark mentioned above are exempted however.

#### 5. Quantity of Sampling Examination

(1) Boards: more than 2 pieces of finished products with an area of at least 1.44 square meters.

(2) paper walls: at least 2 pieces of finished products are sampled in terms of type and materials with a length of at least 1000 mm for each sampled piece.

6. Examination agency: Keelung Branch, Taichung Branch, Kaohsiung Branch and the Sixth Division of the BSMI.

#### 7. Examination Items

(1)Boards:

1. The Dressed rockwool boards for acoustic use, cement bonded wood-wool boards, cement bonded wood-flake boards and the magnesium oxide boards: incombustibility, bending strength, and chinese label.
2. The rock wool sheathing boards: incombustibility, bending strength, and chinese label.
3. The gypsum boards, decorated gypsum boards, gypsum sheathing boards and fire-resistant gypsum boards: incombustibility, bending strength, impact resistance (only the decorated gypsum boards, fire-resistant gypsum boards are examined), peeling resistance in absorbing water (only gypsum sheathing boards is to be examined) and chinese label.
4. The perlite boards, slag gypsum boards, calcium silicate plate (types a, c), fire-retardant hard fiber boards, and fire-retardant insulation boards: incombustibility, flexural strength and chinese label (Calcium silicate boards - type a, which includes the examination of their bulk density).
5. The fiber cement boards, regenerated fiber cement boards, and fiber reinforced cement sidings (type - D): incombustibility, bending strength, impact resistance and chinese label (fiber cement boards, regenerated fiber cement

boards, containing the examination of their bulk density).

6. Fire-retardant decorated hard fiber boards: incombustibility, impact resistance and chinese label.

7. Fire-retardant plywood: incombustibility, formaldehyde emission and chinese label.

(2) Paper walls: incombustibility and chinese label.

8. Examination time constraints:

(1) Boards: 9 working days after sampling for grade-1 incombustibility. 7 working days after sampling for grades-2 and grades-3 incombustibility.

(2) Paper walls: 8 working days after sampling.

### **Chapter 3 Registration of Product Certification Regulations**

9. Type Identification Principles:

(1) The fiber cement boards, regenerated fiber cement boards, perlite boards, calcium silicate boards (type-a and c), slag gypsum boards, cement bonded wood-wool boards, cement bonded wood-flake boards and fire-retardant insulation boards:

1. Same type: the ones with same manufacturing plants, classification (in terms of bulk density 【density】 classification) and incombustibility are regarded as same type.

2. Main type: the ones with the least thickness are the main type categorized under same type.

3. Series type: except for the main type, are the ones with other thicknesses listed as series type under same type.

4. Under same type, for the ones with general boards and decorated boards, the general boards with the least thickness are considered to be the main type, while the general boards with other thicknesses and decorated boards are listed as series type.

(2) The Dressed rockwool boards for acoustic use, Rock wool sheathing boards,

gypsum boards, decorated gypsum boards, gypsum sheathing boards, fire-resistant gypsum boards, magnesium oxide boards, fire-retardant hard fiber boards, fire-retardant decorated hard fiber boards and fire-retardant plywood:

1. Same type: the ones with same manufacturing plants and incombustibility are regarded as same type.
2. Main type: under same type, the ones with the least thickness are considered the main type.
3. Series type: except for the main type, the ones with other thicknesses are listed as series type under same type.
4. Under same type, for the ones with general boards and decorated boards, the general boards with the least thickness are main type, while the general boards with other thicknesses and the decorated boards are listed as series type.

(3) Fiber reinforced cement sidings (class - D):

1. Same type: the ones with same manufacturing plants and incombustibility are regarded as same type.
2. Main type: under same type, the ones with the least thickness are main type.
3. Series type: except for the main type, the ones with other thicknesses are listed as series type under same type.
4. Under same type, for the ones with hollow boards and solid boards, the hollow boards with the least thickness are considered to be the main type, the hollow boards with other thicknesses and the solid boards are listed as series type.

(4) Fire-retardant paper walls (coverings):

1. Same type: the ones with same manufacturing plants are regarded as same type. The ones with the same name under the same type are regarded as one type; the ones with different colors of the same name could be represented by universal codes [e.g. Youya (XXXXXX)].
2. Main type: under same type, one of the type is selected as the main style.
3. Series types shall be those with different type other than the main type [e.g.

Taiyang (XXXXXX) or Yueliang (XXXXXX)] under the same type.

10. The applicant shall submit a type classification table, the following technical documents and samples to the inspection authority or designated testing laboratories recognized by the BSMI for a type test application:

- (1) Product-component table, specimen of Chinese label, and list of specification ( including appearance, materials for surface processing ,and section map ) .
- (2) Color photographs (4’’X6’’ or larger) of finished products or color catalog provided by the manufacturer
- (3) Manufacture process overview ( including fire-retardant treatment process ) .
- (4) For the calcium silicate boards, fiber cement boards, regenerated fiber cement boards and fiber reinforced cement sidings (class - D) shall submit the test report by the laboratory for the content of asbestos.

11. Principles of the Type Test:

(1) Fiber reinforced cement sidings (class - D) commodities:

1. Under Same type, for the ones with only solid boards or hollow boards, the ones with the largest thickness from the main type and series type are sampled to perform examinations, respectively.
2. Under Same type, for the ones with solid boards and hollow boards, the hollow boards with the largest thickness from the main type, series type, and the solid boards with the least thickness from the series type are sampled to perform examinations, respectively.

(2) Boards commodities other than the fiber reinforced cement sidings (class - D): the ones with the largest thickness from the main type and series type are sampled to be examined, respectively.

(3) Commodities listed above with general boards and decorated boards under same type: the general boards with the largest thickness from the main type, series type and the decorated boards with the least thickness from the series type are sampled to perform examinations, respectively.

(4) Paper wall commodities: one commodity is sampled in the main type (for

example, Youya【12345】) and one commodity in the series type is sampled for each style (for example, Taiyang【12345】, Yueliang【12345】 etc.) to perform examinations, respectively.

12. Where any changes or modifications were made to the scope as listed in the test reports, the applicants shall apply for a renewed test reports to the inspection authority that issued the original type test reports. The test principles shall be conducted as follows:

(1) The commodity listed in Article 11.(1) :

1. Under Same type, for the ones with only solid boards or hollow boards, the ones with smaller thickness compared to the main type of same type are listed additionally to perform the examination for said thickness and are rearranged by said thickness to the main type; the ones with larger thickness, in comparison to the series type of same type, are listed additionally to perform the examination for said thickness.

2. Under the same type, for the ones with solid boards and hollow boards, the hollow boards with smaller thickness compared to the main type of same type are listed additionally to perform the examination for said thickness, and are to be rearranged by said thickness to the main type, the ones with larger thicknesses compared to the series type of same type are listed additionally to perform the examination for said thickness; the solid boards with smaller thickness, compared to same type, are listed additionally to perform the examination for said thickness.

(2) The commodity listed in Article 11.(2) : the ones with smaller thickness compared to the main type of same type are listed additionally to perform examination for said thickness and rearrange said thickness to the main type; the ones with larger thickness in comparison to the series type of same type are listed additionally to perform the examination for said thickness.

(3) The commodity listed in Article 11.(3): the general boards with smaller thickness compared to the main type of same type are listed additionally to



perform the examination for said thickness and to rearrange said thickness by their main type, the ones with larger thicknesses, in comparison to the series type under same type, are listed additionally for the examination for said thickness; the decorated boards with smaller thickness compared to the same type are listed additionally to perform examination for said thickness.

(4) Fire-retardant paper walls (coverings): the ones for the series type of same type are listed additionally to perform incombustibility examination.

13. The provisions for the test items of the former 2 Articles are the same as those of Articles 7.

14. Terms for Registration of Product Certification: 14 working days after the inspection authority has granted the application of registration of product certification (excluding the waiting time for re-submitted documents or samples). For those which contain random testing samples, the term is 7 working days after the arrival of samples.

15. The term of validity for Registration of Product Certification certificate shall be three years. The certificate holder may apply for an extension which is limited to one time only.

16. The fire-retardant building materials applied for examination with Registration of Product Certification in modules 4, 5 or 7 should have a cone calorimeters, in addition to have been provided with the equipment procurement certificate and 2 pictures sized 4\*6 inches for the equipment installation site, such that the inspection authority may go to the factory to check on the equipment as need.

17. The basic inspection and testing equipments about cone calorimeters mentioned in the preceding article may be replaced by the following methods:

(1) Establish a comparison module:

1. Manufacturers shall have regular inspection and testing equipments based on the test equipment subject to CNS 6532, ISO 1182, ASTM-E84, UL 723, ISO 1716,

EN 13823, ISO 11925-2, ISO 9705 or other equipment with the same level.

2. Compare the test results conducted by regular inspection and testing equipments with those conducted by CNS 14705 test equipment, and stipulate the cut-off value of each manufacturer.

(2) Production control: conduct inspections by using regular inspection equipment and the cut-off value stipulated by a comparison module to control product quality.

(3) Regular entrusted inspection:

1. Submit certified products to inspection authority, designated test laboratories approved by BSMI or Taiwan Accreditation Foundation to conduct inspection of fire-retardant property in accordance with CNS 14705.

2. Compare the result with test value of a manufacturer to form the basis for modifying the cut-off value.

3. Frequency of entrusting:

(A) Any product of every registered type products manufactured in the quarter shall be submitted to entrusted authorities or laboratories for tests in accordance with CNS14705 during Q1 to Q3 every year. In Q4, every registered product manufactured in that quarter shall be submitted to entrusted authorities or laboratories for tests in accordance with CNS14705.

(B) Every registered product manufactured in Q4 shall be submitted to original inspection authority by the end of a year.

18. Products which obtain the registration of product certification in accordance with the aforementioned article shall be processed in accordance with the following regulations every year:

(1) Entrusted inspection reports and samples of every registered type manufactured in Q4 of the year shall be submitted regularly to the original registered authority

for reference and examination. Products which are not submitted to the inspection authority shall conduct border checks or checks before releasing from the production premises in accordance with Article 7 of the Regulations Governing Registration of Product Certification. The sampling inspection authority shall finish inspection within one month. If the product does not conform to the inspection standards, its registration of product certification shall be rescinded in accordance with Article 42 Clause 1 of the Commodity Inspection Act.

- (2) A CNS mark test report may supersede an entrusted inspection report mentioned in the preceding clause. One CNS mark test report can only replace an entrusted inspection report of one main type or one type of series.

#### **Chapter 4 Other Examination Regulations**

##### 19. Commodity inspection mark:

- (1) The obligatory applicant of boards commodity should mark the commodity inspection mark on each piece of body or the minimum pack; the obligatory applicant of wall papers commodity should be marked on the body or the unit pack itself.
- (2) The ones adopting monitoring inspection should be marked with the commodity inspection mark on the outer pack or unit pack, where there should be the manufacturing date or lot number on the body, and the obligatory applicant should fill and declare the manufacturing date or lot number of said batch of commodities in the lot number field of the inspection application form in detail, the inspection authority that accepts the application for inspection should list the manufacturing date or lot number in the monitoring inspection certificate with detailed remarks .
- (3) The commodities with monitoring inspection adopted should use the commodity inspection mark printed by the BSMI; the commodities with registration of product certification adopted should use the commodity inspection mark

printed by itself.

20. For the boards commodity that should have marked items provisioned by the Chinese National standardized marks on each piece of product, except for the marked items that should have the production country or region marked in traditional Chinese characters, with other items that may be marked in either Chinese or English. The outer pack of the commodity should still be marked with Chinese in compliance with clause 11 of the The Commodity Inspection Act.
21. For the Dressed rockwool boards for acoustic use or Rock wool sheathing boards with a density below  $160\text{kg/m}^3$ , the application of exemption from inspection of bending strength or flexural strength to the BSMI is possible by being in compliance with the international standards project. For the ones with the exemption from inspection of bending strength or flexural strength and with qualified examination, the inspection authority should add, "Exemption from inspection of bending strength or flexural strength" in the remarks field of the monitoring inspection certificate or registration of product certification certificate.
22. For the fire-retardant building materials with thickness larger than the minimum thickness provisioned by the Chinese National Standards and with thickness levels not defined by the Chinese National Standards, if no product related provisions are defined in the Chinese National Standards, then various items examination provisions with respect to the approximately smaller thickness of the Chinese National Standards are referenced for the examination. If there is significant unevenness on the surface, that portion should not be considered when measuring thickness, but if it is not easy to disregard it while measuring thickness, the minimum value for the thickness measurement shall used to determine the specified value as referenced.